AMENDMENTS TO THE CLAIMS:

1. (Original) An electron beam apparatus comprising a hermetic container which includes an electron source having electron emission devices and targets exposed to the electrons emitted from said electron source and further comprising a first member within said hermetic container,

wherein the value of the incident angle multiplication coefficient of secondary electron emission coefficient m_0, which is a parameter of the following formula:

$$\frac{\delta_\theta}{\delta_0} = \frac{1 - \left\{1 - \dfrac{m_0 \cos\theta}{1 + (m_1)^{-1} \times (m_0 \cos\theta)^{m_2}}\right\} \exp(-m_0 \cos\theta)}{1 - \left\{1 - \dfrac{m_0}{1 + (m_1)^{-1} \times m_0^{m_2}}\right\} \exp(-m_0)} \times \frac{1}{\cos\theta}$$

General Formula (1)

is 10 or less,

when obtaining it from the value of secondary electron emission coefficient measured under the conditions that incident energy is 1 keV and incident angle is 0 degree as well as the values measured under the conditions that incident energy is 1 keV and incident angles θ are 20, 40, 60 and 80 degrees by conducting a regression analysis by the least square method in said general formula (1),

provided that the second electron emission coefficient of the surface of said first member has two incident energies which satisfy the second electron emission coefficient $\delta = 1$ under the vertical incident conditions, and that when the larger energy of the above two energies satisfying $\delta = 1$ is referred to as a second cross-point energy, the secondary electron emission coefficients for the primary electrons whose incident angles are θ and 0 degrees are represented by

δ_θ, δ_0, respectively, and

m_1, m_2 have the values

$m_1 = 0.68273$

$m_2 = 0.86212$, respectively,

in the incident energy equal to or lower than the second cross-point energy.

2. (Original) The electron beam apparatus according to claim 1, wherein the incident angle multiplication coefficient of secondary electron emission coefficient m_0 on the surface of said first member is 5 or less in the incident energy equal to or lower than said second cross-point energy when obtaining it from the value of secondary electron emission coefficient measured under the conditions that incident energy is 1 keV and incident angle is 0 degree as well as the values measured under the conditions that incident energy is 1 keV and incident angles θ are 20, 40, 60 and 80 degrees by conducting a regression analysis by the least square method in said general formula (1).

3. (Original) The electron beam apparatus according to claim 1 or claim 2, wherein said first member is provided with an uneven geometry at least on a part of its surface.

4. (Original) The electron beam apparatus according to claim 1, wherein said first member comprises a substrate provided with an uneven geometry at least on a part of its surface and a film coating said uneven geometry portion, the thickness of said film being smaller than the height difference between the top and lowest portions of the uneven geometry of said substrate.

5. (Original) The electron beam apparatus according to claim 1, wherein said first member is provided with an uneven geometry at least on a part of its surface, said uneven geometry being formed in such a direction that the incident angle dependency of said secondary electron emission coefficient is reduced for any of the orbits of the electron beam from the above electron source as well as of the electron beam reflected on said target side.

6. (Original) The electron beam apparatus according to claim 1, wherein said first member is provided with an uneven geometry at least on a part of its surface, said uneven geometry being formed in all directions parallel to the surface of said first member.

7. (Original) The electron beam apparatus according to claim 1, wherein said first member is provided with an uneven geometry at least on a part of its surface, said uneven geometry having the average cycle of 100 μm or shorter.

8. (Original) The electron beam apparatus according to claim 1, wherein said first member is provided with an uneven geometry at least on a part of its surface, said uneven geometry having the average cycle of 10 μm or shorter.

9. (Original) The electron beam apparatus according to claim 1, wherein said first member is provided with an uneven geometry at least on a part of its surface, said uneven geometry having the average roughness ranging from 0.1 μm to 100 μm.

10. (Original) The electron beam apparatus according to claim 1, wherein said first member is provided with an uneven geometry at least on a part of its surface, said uneven geometry consisting of the cycles periods of at least two kinds of unevenness.

11. (Original) The electron beam apparatus according to claim 1, wherein said first member is provided with an uneven geometry at least on a part of its surface, said uneven geometry being obtained by removing the material surface of said first member nonuniformly.

12. (Original) The electron beam apparatus according to claim 1, wherein said first member is provided with a film at least on a part of its surface, said film having a sheet resistivity of 10^7[Ω/□] to 10^{14} [Ω/□].

13. (Original) The electron beam apparatus according to claim 1, wherein said first member is provided with a film at least on a part of its surface, said film containing at least one kind of metal, carbon, silicon, or germanium and consisting of nitride, oxide or carbide.

14 (Original) The electron beam apparatus according to claim 1, wherein said first member is provided with a film at least on a part of its surface, said film, when being formed on a smooth substrate so as to have a smooth surface, having a composition which provides secondary electron emission coefficient of 3.5 or less measured under vertical incident conditions.

15. (Original) The electron beam apparatus according to claim 1, wherein said first member is provided with a film at least on a part of its surface, the surface of said film having a high oxygen concentration as compared with the inside thereof.

16. (Original) The electron beam apparatus according to claim 1, wherein said first member is provided with a film at least on a part of its surface, said film being formed by any one of the following methods: sputtering, vacuum deposition, wet printing, spraying, or dipping.

17. (Original) The electron beam apparatus according to claim 1, wherein said first member abuts said electron source, said first member having a first film provided at least on a part of its surface and a conductive film provided on the portion where said first member and said electron source abut with each other, said first film and said conductive film being in contact with each other.

18. (Original) The electron beam apparatus according to claim 1, wherein said first member abuts an electrode provided within said hermetic container for controlling the electrons emitted from said electron source, said first member having a first film provided at least on a part of its surface and a low resistive film provided on the portion where said first member and said electrode abut with each other, said first film and said low resistive film being in contact with each other.

19. (Original) The electron beam apparatus according to claim 1, wherein said first member is a spacer.

20. (Original) The electron beam apparatus according to claim 1, further comprising an electrode for controlling the electrons emitted from said electron source.

21. (Currently Amended) The electron beam apparatus according to claim 20, wherein the voltage applied between the electron emission device contained in said electron source and said electrode is 3 kV or higher.[,]

22. (Original) The electron beam apparatus according to claim 20 or claim 21, wherein said first member is provided with a film at least on a part of its surface, said film being electrically connected to both of said electron source and said electrode.

23. (Original) The electron beam apparatus according to claim 1, wherein said electron source includes cold cathode devices as an electron emission device.

24. (Original) The electron beam apparatus according to claim 1, wherein said target produces images when being exposed to electrons.

25. (Original) The electron beam apparatus according to claim 1, wherein said target is provided with a fluorescent substance.

26. (Original) An electron beam apparatus comprising a hermetic container which includes an electron source having electron emission devices and targets exposed to the electrons emitted from said electron source and further comprising a first member within said hermetic container,

wherein said first member has a film on its surface, the foundation of

said film having an uneven geometry, the thickness of said film being smaller than the height difference between the top and lowest portions of the uneven geometry of said foundation.

27. (Original) A spacer, wherein the value of the incident angle multiplication coefficient of secondary electron emission coefficient m_0, which is a parameter of the following formula:

$$\frac{\delta_\theta}{\delta_0} = \frac{1 - \left\{1 - \dfrac{m_0 \cos\theta}{1 + (m_1)^{-1} \times (m_0 \cos\theta)^{m_2}}\right\} \exp(-m_0 \cos\theta)}{1 - \left\{1 - \dfrac{m_0}{1 + (m_1)^{-1} \times m_0^{m_2}}\right\} \exp(-m_0)} \times \frac{1}{\cos\theta}$$

General Formula (1)

is 10 or less,

when obtaining it from the value of secondary electron emission coefficient measured under the conditions that incident energy is 1 keV and incident angle is 0 degree as well as the values measured under the conditions that incident energy is 1 keV and incident angles θ are 20, 40, 60 and 80 degrees by conducting a regression analysis by the least square method in said general formula (1), provided that the second electron emission coefficient of its surface has two incident energies which satisfy the second electron emission coefficient $\delta = 1$ under the vertical incident conditions, and that when the larger energy of said two energies satisfying said condition $\delta = 1$ is referred to as a second cross-point energy, the secondary electron emission coefficients for the primary electrons whose incident angles are θ and 0 degrees are represented by

δ_θ, δ_0, respectively, and

m_1, m_2 have the values

$m_1 = 0.68273$

$m_2 = 0.86212$, respectively,

in the incident energy equal to or lower than the second cross-point energy.

28. (Currently Amended) The spacer according to claim 27, wherein the incident angle multiplication coefficient of secondary electron emission coefficient m_0 on the surface of said spacer is 5 or less in the incident energy equal to or lower than said cross-point energy when obtaining it from the value of secondary electron emission coefficient measured under the conditions that incident energy is 1 keV and incident angle is 0 degree as well as the values measured under the conditions that incident energy is ~~1keV~~ 1 keV and incident angles θ are 20, 40, 60 and 80 degrees by conducting a regression analysis by the least square method in said general formula (1).

29. (Previously Presented) The spacer according to claim 27 or claim 28, wherein said spacer is provided with an uneven geometry at least on a part of its surface.

30. (Original) The spacer according to claim 27, comprising a substrate provided with an uneven geometry at least on a part of its surface and a film coating said uneven geometry portion, the thickness of said film being smaller than the height difference between the top and lowest portions of the uneven geometry of said substrate.

31. (Original) The spacer according to claim 27, comprising an uneven geometry at least on a part of its surface, said uneven geometry being formed in all directions parallel to said surface.

32. (Original) The spacer according to claim 27, comprising an uneven geometry at least on a part of its surface, said uneven geometry having the average cycle of 100 μm or shorter.

33. (Original) The spacer according to claim 27, comprising an uneven geometry at least on a part of its surface, said uneven geometry having the average cycle of 10 μm or shorter.

34. (Original) The spacer according to claim 27, comprising an uneven geometry at least on a part of its surface, said uneven geometry having the average roughness ranging from 0.1 μm to 100 μm.

35. (Original) The spacer according to claim 27, comprising an uneven geometry at least on a part of its surface, said uneven geometry consisting of the cycles of at least two kinds of unevenness.

36. (Previously Presented) The spacer according to claim 27, comprising an uneven geometry at least on a part of its surface, said uneven geometry being obtained by removing the material surface of said spacer nonuniformly.

37. (Original) The spacer according to claim 27, comprising a film at least on a part of its surface, said film having a sheet resistivity of 10^{7} [Ω/□] to 10^{11} [Ω/□].

38. (Original) The spacer according to claim 27, comprising a film at least on a part of its surface, said film containing at least one kind of metal, carbon, silicon,

or germanium and consisting of nitride, oxide or carbide.

39. (Original) The spacer according to claim 27, comprising a film at least on a part of its surface, said film, when being formed on a smooth substrate so as to have a smooth surface, having a composition which provides secondary electron emission coefficient of 3.5 or less under vertical incident conditions.

40. (Original) The spacer according to claim 27, comprising a film at least on a part of its surface, the surface of said film having a high oxygen concentration as compared with the inside thereof.

41. (Original) The spacer according to claim 27, comprising a film at least on a part of its surface, said film being formed by any one of the following methods: sputtering, vacuum deposition, wet printing, spraying, or dipping.

42. (Original) The spacer according to claim 27, comprising a film on its surface, the foundation of said film comprising an uneven geometry, the thickness of said film being smaller than the height difference between the top and lowest portions of the uneven geometry of said foundation.

43. (Previously Presented) An electron beam apparatus comprising a hermetic container which includes an electron source having electron emission devices and targets exposed to the electrons emitted from said electron source and further comprising a first member within said hermetic container,

wherein the value of the incident angle multiplication coefficient m_0

of secondary electron emission coefficient, which is a parameter of the following formula:

$$\frac{\delta_\theta}{\delta_0} = \frac{1 - \left\{1 - \dfrac{m_0 \cos\theta}{1 + (m_1)^{-1} \times (m_0 \cos\theta)^{m_2}}\right\} \exp(-m_0 \cos\theta)}{1 - \left\{1 - \dfrac{m_0}{1 + (m_1)^{-1} \times m_0^{\,m_2}}\right\} \exp(-m_0)} \times \frac{1}{\cos\theta}$$

General Formula (1)

is 10 or less,

when obtaining it from the value of secondary electron emission coefficient measured under the conditions that incident energy is 1 keV and incident angle is 0 degree as well as the values measured under the conditions that incident energy is 1 keV and incident angles θ are 20, 40, 60 and 80 degrees by conducting a regression analysis by the least square method in said general formula (1),

provided that the second electron emission coefficient of the surface of said first member has two incident energies which satisfy the second electron emission coefficient δ = 1 under the vertical incident conditions, and that when the larger energy of the above two energies satisfying δ = 1 is referred to as a second cross-point energy, the secondary electron emission coefficients for the primary electrons whose incident angles are θ and 0 degrees are represented by

δ_θ, δ_0, respectively, and

m_1, m_2 have the values

$m_1 = 0.68273$

$m_2 = 0.86212$, respectively,

in the incident energy equal to or lower than the second cross-point energy,

wherein said first member is provided with an uneven geometry at least on a part of its surface, said uneven geometry being arranged at least in two directions

on the surface.

44. (Previously Presented) An electron beam apparatus comprising a hermetic container which includes an electron source having electron emission devices and targets exposed to the electrons emitted from said electron source and further comprising a first member within said hermetic container,

wherein the value of the incident angle multiplication coefficient m_0 of secondary electron emission coefficient, which is a parameter of the following formula:

$$\frac{\delta_\theta}{\delta_0} = \frac{1-\left\{1-\dfrac{m_0\cos\theta}{1+\left(m_1\right)^{-1}\times\left(m_0\cos\theta\right)^{m_2}}\right\}\exp\left(-m_0\cos\theta\right)}{1-\left\{1-\dfrac{m_0}{1+\left(m_1\right)^{-1}\times m_0^{\,m_2}}\right\}\exp\left(-m_0\right)}\times\frac{1}{\cos\theta}$$

General Formula (1)

is 10 or less,

when obtaining it from the value of secondary electron emission coefficient measured under the conditions that incident energy is 1 keV and incident angle is 0 degree as well as the values measured under the conditions that incident energy is 1 keV and incident angles θ are 20, 40, 60 and 80 degrees by conducting a regression analysis by the least square method in said general formula (1),

provided that the second electron emission coefficient of the surface of said first member has two incident energies which satisfy the second electron emission coefficient $\delta = 1$ under the vertical incident conditions, and that when the larger energy of the above two energies satisfying $\delta = 1$ is referred to as a second cross-point energy, the secondary electron emission coefficients for the primary electrons whose incident angles

are θ and 0 degrees are represented by

δ_{θ}, δ_0, respectively, and

m_1, m_2, have the values

$m_1 = 0.68273$

$m_2 = 0.86212$, respectively,

in the incident energy equal to or lower than the second cross-point energy,

wherein said first member is provided with an uneven geometry at least on a part of its surface, said uneven geometry constituting of the amplitudes of at least two kinds of unevenness.

45. (Previously Presented) An electron beam apparatus comprising a hermetic container which includes an electron source having electron emission devices and targets exposed to the electrons emitted from said electron source and further comprising a first member within said hermetic container,

wherein the value of the incident angle multiplication coefficient m_0 of secondary electron emission coefficient, which is a parameter of the following formula:

$$\frac{\delta_\theta}{\delta_0} = \frac{1 - \left\{1 - \dfrac{m_0 \cos\theta}{1 + (m_1)^{-1} \times (m_0 \cos\theta)^{m_2}}\right\} \exp(-m_0 \cos\theta)}{1 - \left\{1 - \dfrac{m_0}{1 + (m_1)^{-1} \times m_0^{m_2}}\right\} \exp(-m_0)} \times \frac{1}{\cos\theta}$$

General Formula (1)

is 10 or less.

when obtaining it from the value of secondary electron emission coefficient measured under the conditions that incident energy is 1 keV and incident angle

is 0 degree as well as the values measured under the conditions that incident energy is 1 keV and incident angles θ are 20, 40, 60 and 80 degrees by conducting a regression analysis by the least square method in said general formula (1),

provided that the second electron emission coefficient of the surface of said first member has two incident energies which satisfy the second electron emission coefficient $\delta = 1$ under the vertical incident conditions, and that when the larger energy of the above two energies satisfying $\delta = 1$ is referred to as a second cross-point energy, the secondary electron emission coefficients for the primary electrons whose incident angles are θ and 0 degrees are represented by

δ_{θ}, δ_0, respectively, and

m_1, m_2 have the values

$m_1 = 0.68273$

$m_2 = 0.86212$, respectively,

in the incident energy equal to or lower than the second cross-point energy,

wherein said first member is provided with an uneven geometry at least on a part of its surface, said uneven geometry constituting of the cycles periods of at least two kinds of unevenness.

46. (Previously Presented) A spacer, wherein the value of the incident angle multiplication coefficient m_0 of secondary electron emission coefficient, which is a parameter of the following formula:

$$\frac{\delta_\theta}{\delta_0} = \frac{1 - \left\{1 - \dfrac{m_0 \cos\theta}{1 + (m_1)^{-1} \times (m_0 \cos\theta)^{m_2}}\right\} \exp(-m_0 \cos\theta)}{1 - \left\{1 - \dfrac{m_0}{1 + (m_1)^{-1} \times m_0^{\ m_2}}\right\} \exp(-m_0)} \times \frac{1}{\cos\theta}$$

General Formula (1)

is 10 or less,

when obtaining it from the value of secondary electron emission coefficient measured under the conditions that incident energy is 1 keV and incident angle is 0 degree as well as the values measured under the conditions that incident energy is 1 keV and incident angles θ are 20, 40, 60 and 80 degrees by conducting a regression analysis by the least square method in said general formula (1), provided that the second electron emission coefficient of its surface has two incident energies which satisfy the second electron emission coefficient $\delta = 1$ under the vertical incident conditions, and that when the larger energy of said two energies satisfying said condition $\delta = 1$ is referred to as a second cross-point energy, the secondary electron emission coefficients for the primary electrons whose incident angles are θ and 0 degrees are represented by

δ_θ, δ_0, respectively, and

m_1 , m_2 have the values

$m_1 = 0.68273$

$m_2 = 0.86212$, respectively,

in the incident energy equal to or lower than the second cross-point energy,

wherein said spacer is provided with an uneven geometry at least on a part of its surface, said uneven geometry being arranged at least in two directions on the surface.

47. (Previously Presented) A spacer, wherein the value of the incident angle multiplication coefficient m_0 of secondary electron emission coefficient, which is a parameter of the following formula:

$$\frac{\delta_\theta}{\delta_0} = \frac{1 - \left\{1 - \dfrac{m_0 \cos\theta}{1 + (m_1)^{-1} \times (m_0 \cos\theta)^{m_2}}\right\} \exp(-m_0 \cos\theta)}{1 - \left\{1 - \dfrac{m_0}{1 + (m_1)^{-1} \times m_0^{\,m_2}}\right\} \exp(-m_0)} \times \frac{1}{\cos\theta}$$

General Formula (1)

is 10 or less,

when obtaining it from the value of secondary electron emission coefficient measured under the conditions that incident energy is 1 keV and incident angle is 0 degree as well as the values measured under the conditions that incident energy is 1 keV and incident angles θ are 20, 40, 60 and 80 degrees by conducting a regression analysis by the least square method in said general formula (1), provided that the second electron emission coefficient of its surface has two incident energies which satisfy the second electron emission coefficient $\delta = 1$ under the vertical incident conditions, and that when the larger energy of said two energies satisfying said condition $\delta = 1$ is referred to as a second cross-point energy, the secondary electron emission coefficients for the primary electrons whose incident angles are θ and 0 degrees are represented by

δ_θ, δ_0, respectively, and

m_1, m_2 have the values

$m_1 = 0.68273$

$m_2 = 0.86212$, respectively,

in the incident energy equal to or lower than the second cross-point energy,

wherein said spacer is provided with an uneven geometry at least on

a part of its surface, said uneven geometry constituting of the amplitudes of at least two kinds of unevenness.

48. (Previously Presented) A spacer, wherein the value of the incident angle multiplication coefficient m_0 of secondary electron emission coefficient, which is a parameter of the following formula:

$$\frac{\delta_\theta}{\delta_0} = \frac{1 - \left\{ 1 - \dfrac{m_0 \cos\theta}{1 + (m_1)^{-1} \times (m_0 \cos\theta)^{m_2}} \right\} \exp(-m_0 \cos\theta)}{1 - \left\{ 1 - \dfrac{m_0}{1 + (m_1)^{-1} \times m_0^{m_2}} \right\} \exp(-m_0)} \times \frac{1}{\cos\theta}$$

General Formula (1)

is 10 or less,

when obtaining it from the value of secondary electron emission coefficient measured under the conditions that incident energy is 1 keV and incident angle is 0 degree as well as the values measured under the conditions that incident energy is 1 keV and incident angles θ are 20, 40, 60 and 80 degrees by conducting a regression analysis by the least square method in said general formula (1), provided that the second electron emission coefficient of its surface has two incident energies which satisfy the second electron emission coefficient $\delta = 1$ under the vertical incident conditions, and that when the larger energy of said two energies satisfying said condition $\delta = 1$ is referred to as a second cross point energy, the secondary electron emission coefficients for the primary electrons whose incident angles are θ and 0 degrees are represented by

δ_θ, δ_0, respectively, and

m_1, m_2 have the values

$m_1 = 0.68273$

$m_2 = 0.86212$, respectively,

in the incident energy equal to or lower than the second cross-point energy,

wherein said spacer is provided with an uneven geometry at least on a part of its surface, said uneven geometry constituting of the cycles periods of at least two kinds of unevenness.

49. (Previously Presented) An electron beam apparatus comprising a hermetic container which includes an electron source having electron emission devices and targets exposed to the electrons emitted from said electron source and further comprising a first member within said hermetic container,

wherein said first member is provided with an uneven geometry at least on a part of its surface, said uneven geometry being arranged at least in two directions on the surface, such that total secondary electron emissions generated by irradiating said uneven geometry of said first member with electrons emitted from plural directions is smaller than total secondary electron emissions generated in a case of irradiating a flat surface with electrons under same conditions.

50. (Previously Presented) An electron beam apparatus comprising a hermetic container which includes an electron source having electron emission devices and targets exposed to electrons emitted from said electron source and further comprising a first member within said hermetic container,

wherein said first member is provided with an uneven geometry at least on a part of its surface, said uneven geometry constituting of the amplitudes of at least two kinds of unevenness, such that total secondary electron emissions generated by irradiating said uneven geometry of said first member with electrons emitted from plural

directions is smaller than total secondary electron emissions generated in a case of irradiating a flat surface with electrons under same conditions.

51. (Previously Presented) An electron beam apparatus comprising a hermetic container which includes an electron source having electron emission devices and targets exposed to electrons emitted from said electron source and further comprising a first member within said hermetic container,

wherein said first member is provided with an uneven geometry at least on a part of its surface, said uneven geometry constituting of the cycles periods of at least two kinds of unevenness, such that total secondary electron emissions generated by irradiating said uneven geometry of said first member with electrons emitted from plural directions is smaller than total secondary electron emissions generated in a case of irradiating a flat surface with electrons under same conditions.

52. (Previously Presented) An electron beam apparatus according to any one of claims 43, 46, and 49,

wherein the direction along which said uneven geometry is arranged is random.

53. (Previously Presented) An electron beam apparatus according to any one of claims 44, 47, and 50,

wherein the amplitudes of said uneven geometry is random.

54. (Previously Presented) An electron beam apparatus according to any one of claims 45, 48, and 51,

wherein the cycle periods of said uneven geometry is random.

55. (Previously Presented) An electron beam apparatus according to any one of claims 1, 27, 45, 48, 49, 50, and 51,

wherein said first member has a roughing film.

56. (Previously Presented) The electron beam apparatus according to claim 43, wherein the incident angle multiplication coefficient of secondary electron emission coefficient m_0 on the surface of said first member is 5 or less in the incident energy equal to or lower than said second cross-point energy when obtaining it from the value of secondary electron emission coefficient measured under the conditions that incident energy is 1 keV and incident angle is θ degree as well as the values measured under the conditions that incident energy is 1 keV and incident angles θ are 20, 40, 60 and 80 degrees by conducting a regression analysis by the least square method in said general formula (1).

57. (Previously Presented) The electron beam apparatus according to claim 43, wherein said first member comprises a substrate provided with an uneven geometry at least on a part of its surface and a film coating said uneven geometry portion, the thickness of said film being smaller than the height difference between the top and lowest portions of the uneven geometry of said substrate.

58. (Previously Presented) The electron beam apparatus according to claim 43, wherein said first member is provided with an uneven geometry at least on a part of its surface, said uneven geometry being formed in such a direction that the incident

angle dependency of said secondary electron emission coefficient is reduced for any of the orbits of the electron beam from the above electron source as well as of the electron beam reflected on said target side.

59. (Previously Presented) The electron beam apparatus according to claim 43, wherein said first member is provided with an uneven geometry at least on a part of its surface, said uneven geometry being formed in all directions parallel to the surface of said first member.

60. (Previously Presented) The electron beam apparatus according to claim 43, wherein said first member is provided with an uneven geometry at least on a part of its surface, said uneven geometry having the average cycle of 100 μm or shorter.

61. (Previously Presented) The electron beam apparatus according to claim 43, wherein said first member is provided with an uneven geometry at least on a part of its surface, said uneven geometry having the average cycle of 10 μm or shorter.

62. (Previously Presented) The electron beam apparatus according to claim 43, wherein said first member is provided with an uneven geometry at least on a part of its surface, said uneven geometry having the average roughness ranging from 0.1 μm to 100 μm.

63. (Previously Presented) The electron beam apparatus according to claim 43, wherein said first member is provided with an uneven geometry at least on a part of its surface, said uneven geometry being obtained by removing the material surface of

said first member nonuniformly.

64. (Previously Presented) The electron beam apparatus according to claim 43, wherein said first member is provided with a film at least on a part of its surface, said film having a sheet resistivity of 10^7 [Ω/□] to 10^{14} [Ω/□].

65. (Previously Presented) The electron beam apparatus according to claim 43, wherein said first member is provided with a film at least on a part of its surface, said film containing at least one kind of metal, carbon, silicon, or germanium and consisting of nitride, oxide or carbide.

66. (Previously Presented) The electron beam apparatus according to claim 43, wherein said first member is provided with a film at least on a part of its surface, said film, when being formed on a smooth substrate so as to have a smooth surface, having a composition which provides secondary electron emission coefficient of 3.5 or less measured under vertical incident conditions.

67. (Previously Presented) The electron beam apparatus according to claim 43, wherein said first member is provided with a film at least on a part of its surface, the surface of said film having a high oxygen concentration as compared with the inside thereof.

68. (Previously Presented) The electron beam apparatus according to claim 43, wherein said first member is provided with a film at least on a part of its surface, said film being formed by any one of the following methods: sputtering, vacuum

deposition, wet printing, spraying, or dipping.

69. (Previously Presented) The electron beam apparatus according to claim 43, wherein said first member abuts said electron source, said first member having a first film provided at least on a part of its surface and a conductive film provided on the portion where said first member and said electron source abut with each other, said first film and said conductive film being in contact with each other.

70. (Previously Presented) The electron beam apparatus according to claim 43, wherein said first member abuts an electrode provided within said hermetic container for controlling the electrons emitted from said electron source, said first member having a first film provided at least on a part of its surface and a low resistive film provided on the portion where said first member and said electrode abut with each other, said first film and said low resistive film being in contact with each other.

71. (Previously Presented) The electron beam apparatus according to claim 43, wherein said first member is a spacer.

72. (Previously Presented) The electron beam apparatus according to claim 43, further comprising an electrode for controlling the electrons emitted from said electron source.

73. (Previously Presented) The electron beam apparatus according to claim 72, wherein the voltage applied between the electron emission device contained in said electron source and said electrode is 3 kV or higher.

74. (Previously Presented) The electron beam apparatus according to claim 72 or claim 73, wherein said first member is provided with a film at least on a part of its surface, said film being electrically connected to both of said electron source and said electrode.

75. (Previously Presented) The electron beam apparatus according to claim 43, wherein said electron source includes cold cathode devices as an electron emission device.

76. (Previously Presented) The electron beam apparatus according to claim 43, wherein said target produces images when being exposed to electrons.

77. (Previously Presented) The electron beam apparatus according to claim 43, wherein said target is provided with a fluorescent substance.

78. (Previously Presented) The electron beam apparatus according to claim 26, wherein said first member is provided with a film at least on a part of its surface, said film having a sheet resistivity of 10^7 [Ω/□] to 10^{14} [Ω/□].

79. (Previously Presented) The electron beam apparatus according to claim 26, wherein said first member is provided with a film at least on a part of its surface, said film containing at least one kind of metal, carbon, silicon, or germanium and consisting of nitride, oxide or carbide.

80. (Previously Presented) The electron beam apparatus according to

claim 26, wherein said first member is provided with a film at least on a part of its surface, the surface of said film having a high oxygen concentration as compared with the inside thereof.

81. (Previously Presented) The electron beam apparatus according to claim 26, wherein said first member is provided with a film at least on a part of its surface, said film being formed by any one of the following methods: sputtering, vacuum deposition, wet printing, spraying, or dipping.

82. (Previously Presented) The electron beam apparatus according to claim 26, wherein said first member abuts said electron source, said first member having a first film provided at least on a part of its surface and a conductive film provided on the portion where said first member and said electron source abut with each other, said first film and said conductive film being in contact with each other.

83. (Previously Presented) The electron beam apparatus according to claim 26, wherein said first member abuts an electrode provided within said hermetic container for controlling the electrons emitted from said electron source, said first member having a first film provided at least on a part of its surface and a low resistive film provided on the portion where said first member and said electrode abut with each other, said first film and said low resistive film being in contact with each other.

84. (Previously Presented) The electron beam apparatus according to claim 26, wherein said electron source includes cold cathode devices as an electron emission device.

85. (Cancelled)

86. (Previously Presented) An apparatus according to claim 91, wherein said spacer comprises an insulative spacer body and a high resistance film formed on a surface of said spacer body.

87. (Previously Presented) An apparatus according to claim 91, wherein said spacer has a structure comprising an insulative spacer body and a high resistance film formed on a surface of said spacer body, a fine unevenness is formed on the surface of said spacer body, and, based on the fine unevenness on the surface of said spacer body, a fine unevenness is formed on a surface of said high resistance film.

88. (Previously Presented) An apparatus according to claim 91, wherein said spacer has a structure comprising an insulative spacer body and a high resistance film formed on a surface of said spacer body, and a fine unevenness is formed on a surface of said high resistance film.

89. (Previously Presented) An apparatus according to claim 91, wherein said spacer has a surface resistance in a range of 10^7 - $14^{14}\Omega$ /□.

90. (Previously Presented) An apparatus according to claim 91, wherein said spacer has a structure comprising an insulative spacer body and a high resistance film formed on a surface of said insulative spacer body, and said high resistance film has a surface resistance in a range of 10^7 - $14^{14}\Omega$ /□.

91. (Previously Presented) A flat display apparatus, comprising:

first and second substrates supported in opposition to each other, wherein a spacer having a predetermined height exists between said first and second substrates, a periphery of opposing sections of said first and second substrates are hermetically sealed to form a hermetic flat space between said first and second substrates, and an electron-emitting section is disposed at a side of said first substrate; and

a phosphor plane disposed at a side of said second substrate,

wherein an electron derived from said electron-emitting section is accelerated and irradiates onto said phosphor plane to cause an excited light emission from said phosphor plane, thereby performing a desired light emission displaying, and a surface of said spacer includes a fine unevenness, and

wherein a maximum height Rmax of the fine unevenness of the surface meets $0.05\mu m \leqq Rmax \leqq 100\mu m$.

92. (Currently Amended) an apparatus according to claim 91, wherein the fine uneven surface is formed <u>on</u> at least a part of said spacer.

93. (Previously Presented) An electron beam apparatus, comprising:

a hermetic container which includes an electron source having electron emission devices and targets exposed to electrons emitted from said electron source; and

a first member within said hermetic container,

wherein said first member is provided with an uneven geometry on at least a part of its surface, and said uneven geometry has multiple cycles, such that total secondary electron emissions generated by irradiating said uneven geometry of said first

member with electrons emitted from plural directions is smaller than total secondary electron emissions generated in a case of irradiating a flat surface with electrons under same conditions.

94. (Previously Presented) An electron beam apparatus, comprising:

a hermetic container which includes an electron source having electron emission devices and targets exposed to electrons emitted from said electron source; and

a first member within said hermetic container,

wherein said first member is provided with a random uneven geometry on at least a part of its surface, said uneven geometry being arranged at least in two directions on the surface, such that total secondary electron emissions generated by irradiating said uneven geometry of said first member with electrons emitted from plural directions is smaller than total secondary electron emissions generated in a case of irradiating a flat surface with electrons under same conditions.

95. (Previously Presented) An electron beam apparatus comprising a hermetic container which includes an electron source having electron emission devices and targets exposed to electrons emitted from said electron source and further comprising a first member within said hermetic container,

wherein said first member is provided with an uneven geometry at least on a part of its surface, said uneven geometry being arranged at least in two directions on the surface, such that total secondary electron emissions generated by irradiating the uneven geometry of said first member with electrons incident therein in a larger incident angle is smaller than total secondary electron emissions generated in a case of irradiating a

flat surface with electrons under same conditions.

96. (Previously Presented) An electron beam apparatus comprising a hermetic container which includes an electron source having electron emission devices and targets exposed to electrons emitted from said electron source and further comprising a first member within said hermetic container,

wherein said first member is provided with an uneven geometry at least on a part of its surface, said uneven geometry constituting of amplitudes of at least two kinds of unevenness, such that a total secondary electron emissions generated by irradiating the uneven geometry of said first member with electrons incident therein in a larger incident angle is smaller than total secondary electron emissions generated in a case of irradiating a flat surface with electrons under same conditions.

97. (Currently Amended) An electron beam apparatus comprising a hermetic container which includes an electron source having electron emission devices and targets exposed to the electrons emitted from said electron source and further comprising a first member within said hermetic container,

wherein said first member is ~~provide~~ provided with an uneven geometry at least on a part of its surface, said uneven geometry constituting of the cycles periods of at least two kinds of unevenness, such that total secondary electron emissions generated by irradiating the uneven geometry of said first member with electrons incident therein in a larger incident angle is smaller than total secondary electron emissions generated in case of irradiating a flat surface with electrons under same conditions.

98. (Previously Presented) An electron beam apparatus, comprising:

a hermetic container which includes an electron source having electron emission devices and targets exposed to electrons emitted from said electron source; and

a first member within said hermetic container,

wherein said first member is provided with an uneven geometry on at least a part of its surface, and said uneven geometry has multiple cycles, such that total secondary electron emissions generated by irradiating the uneven geometry of said first member with electrons incident therein in a larger incident angle is smaller than total secondary electron emissions generated in a case of irradiating a flat surface with electrons under same conditions.

99. (Previously Presented) An electron beam apparatus, comprising:

a hermetic container which includes an electron source having electron emission devices and targets exposed to electrons emitted from said electron source; and

a first member within said hermetic container,

wherein said first member is provided with a random uneven geometry on at least a part of its surface, such that total secondary electron emissions generated by irradiating the uneven geometry of said first member with electrons incident therein in a larger incident angle is smaller than total secondary electron emissions generated in case of irradiating a flat surface with electrons under same conditions.

100. (Previously Presented) An electron beam apparatus comprising a hermetic container which includes an electron source having electron emission devices and targets exposed to the electrons emitted from said electron source and further comprising a first member within said hermetic container,

wherein said first member is provided with an uneven geometry at least on a part of its surface, such that total secondary electron emissions generated by irradiating said uneven geometry of said first member with electrons reflected from said targets is smaller than total secondary electron emissions generated in a case of irradiating a flat surface with electrons under same conditions.

101. (Currently Amended) An electron beam apparatus comprising a hermetic container which includes an electron source having electron emission devices and targets exposed to the electrons emitted from said electron source and further comprising a first member within said hermetic container,

wherein said first member is provided with an uneven geometry at least on a part of its surface, said uneven geometry constituting of amplitudes of at least two kinds of unevenness <u>and having an opening region which is not covered or closed</u>.

102. (Previously Presented) An electron beam apparatus comprising a hermetic container which includes an electron source having electron emission devices and targets exposed to the electrons emitted from said electron source and further comprising a first member within said hermetic container,

wherein said first member is provided with an uneven geometry at least on a part of its surface, said uneven geometry constituting of the cycles periods of at least two kinds of unevenness, such that total secondary electron emissions generated by

irradiating said uneven geometry of said first member with electrons reflected from said targets is smaller than total secondary electron emissions generated in a case of irradiating a flat surface with electrons under same conditions.

103. (Previously Presented) An electron beam apparatus, comprising:

a hermetic container which includes an electron source having electron emission devices and targets exposed to electrons emitted from said electron source; and

a first member within said hermetic container,

wherein said first member is provided with an uneven geometry on at least a part of its surface, and said uneven geometry has multiple cycles, such that total secondary electron emissions generated by irradiating said uneven geometry of said first member with electrons reflected from said targets is smaller than total secondary electron emissions generated in a case of irradiating a flat surface with electrons under same conditions.

104. (Previously Presented) An electron beam apparatus, comprising:

a hermetic container which includes an electron source having electron emission devices and targets exposed to electrons emitted from said electron source; and

a first member within said hermetic container,

wherein said first member is provided with a random uneven geometry on at least a part of its surface, such that total secondary electron emissions generated by irradiating said uneven geometry of said first member with electrons reflected from said targets is smaller than total secondary electron emissions generated in a case of

irradiating a flat surface with electrons under same conditions.

105. (Previously Presented) An electron beam apparatus comprising a hermetic container which includes an electron source having electron emission devices and targets exposed to electrons emitted from said electron source and further comprising a first member within said hermetic container,

wherein said first member is provided with an uneven geometry at least on a part of its surface, such that charging said first member by irradiating said uneven geometry of said first member with electrons reflected from said targets is smaller than charging said first member irradiating a flat surface with the electrons under the same conditions.

106. (Cancelled).

107. (Previously Presented) An electron beam apparatus comprising a hermetic container which includes an electron source having electron emission devices and targets exposed to electrons emitted from said electron source and further comprising a first member within said hermetic container,

wherein said first member is provided with an uneven geometry at least on a part of its surface, said uneven geometry constituting of the cycles periods of at least two kinds of unevenness, such that charging said first member by irradiating said uneven geometry of said first member with electrons reflected from said targets is smaller than charging said first member irradiating a flat surface with the electrons under same conditions.

108. (Previously Presented) An electron beam apparatus, comprising:

a hermetic container which includes an electron source having electron emission devices and targets exposed to electrons emitted from said electron source; and

a first member within said hermetic container,

wherein said first member is provided with an uneven geometry on at least a part of its surface, and said uneven geometry has multiple cycles, such that charging said first member by irradiating said uneven geometry of said first member with electrons reflected from said targets is smaller than charging said first member irradiating a flat surface with the electrons under same conditions.

109. (Previously Presented) An electron beam apparatus, comprising:

a hermetic container which includes an electron source having electron emission devices and targets exposed to electrons emitted from said electron source; and

a first member within said hermetic container,

wherein said first member is provided with a random uneven geometry on at least a part of its surface, such that charging said first member by irradiating said uneven geometry of said first member with electrons reflected from said targets is smaller than charging said first member irradiating a flat surface with the electrons under same conditions.

110. (Previously Presented) An electron beam apparatus according to any one of claims 95, 100, and 105,

wherein the direction along which said uneven geometry is arranged

is random.

111. (Currently Amended) An electron beam apparatus according to any one of claims ~~96, 101, and 106~~ 96 and 101,

wherein the amplitudes of said uneven geometry is random.

112. (Previously Presented) An electron beam apparatus according to any one of claims 97, 102, and 107,

wherein the cycle periods of said uneven geometry is random.

113. (Currently Amended) An electron beam apparatus comprising a hermetic container which includes an electron source having electron emission devices and targets exposed to electrons emitted from said electron source and further comprising a first member within said hermetic container, wherein said first member is provided with an uneven geometry on at least a part of its surface, and the uneven geometry is substantially comprised of a plurality of depressions, wherein the depressions are arranged along varied directions on the surface and the depressions are not covered or closed.

114. (Currently Amended) An electron beam apparatus comprising a hermetic container which includes an electron source having electron emission devices and targets exposed to electrons emitted from said electron source and further comprising a first member within said hermetic container, wherein said first member is provided with an uneven geometry on at least a part of its surface, the uneven geometry being substantially comprised of a plurality of depressions, wherein the depressions have various amplitudes and the depressions are not covered or closed.

115. (Currently Amended) An electron beam apparatus comprising a hermetic container which includes an electron source having electron emission devices and targets exposed to electrons emitted from said electron source and further comprising a first member within said hermetic container, wherein said first member is provided with an uneven geometry on at least a part of its surface, the uneven geometry being substantially comprised of a plurality of depressions, and wherein the depressions have various pitches <u>and the depressions are not covered or closed</u>.

116. (Previously Presented) An electron beam apparatus according to claim 113, wherein the directions along which said depressions are arranged are random.

117. (Previously Presented) An electron beam apparatus according to claim 114, wherein the amplitudes of said depressions are random.

118. (Previously Presented) An electron beam apparatus according to claim 115, wherein the pitches of said depressions are random.

119. (Previously Presented) An electron beam apparatus according to any one of claims 113-115, wherein said first member has a roughing film.

120. (Currently Amended) An electron beam apparatus comprising a hermetic container which includes an electron source having electron emission devices and targets exposed to electrons emitted from said electron source and further comprising a first member within said hermetic container, wherein said first member is provided with an uneven geometry on at least a part of its surface, the uneven geometry being substantially

comprised of a plurality of depressions, wherein there is a multiplicity of cycles of said depressions <u>and said depressions are not covered or closed</u>.

121. (Currently Amended) An electron beam apparatus comprising a hermetic container which includes an electron source having electron emission devices and targets exposed to electrons emitted from said electron source and further comprising a first member within said hermetic container, wherein said first member is provided with an uneven geometry on at least a part of its surface, and the uneven geometry is substantially comprised of a plurality of depressions, wherein there is a multiplicity of amplitudes of said depressions <u>and said depressions are not covered or closed</u>.

122. (Previously Presented) An electron beam apparatus comprising a hermetic container which includes an electron source having electron emission devices and targets exposed to electrons emitted from said electron source and further comprising a first member within said hermetic container, wherein said first member is provided with an uneven geometry on at least a part of its surface, and the uneven geometry is substantially comprised of a plurality of depressions and is formed by multiplying one cycle of said depressions with random cycles of said depressions different from the one cycle.